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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,577	02/22/2002	Naoki Takahashi	020528	7678

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EXAMINER	
CHOWDHURY, TARIFUR RASHID	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/079,577	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Tarifur R Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 02/22/02, citing U.S patent application 09/5252,715 and 09/571,539 have been considered by the examiner.

Claim Objections

3. Claim 3 is objected to because of the following informalities: In claim 3, line 2, "the light source can turn on and off light" should be changed to –the light source can turn light on and off--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said light source" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recite the limitations "the reference flat plane" and "the projected area" in lines 8 and 14-15 respectively. There are insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mol et al., (Mol), USPAT 5,856,855.

8. Mol discloses and shows in Figs. 1 and 2, a liquid crystal display apparatus comprising:

- a light pipe (9) for emitting an incident light coming from a light source (11) from a lower surface (25) of the light pipe via a light emitting means (33) formed on an upper surface (19);

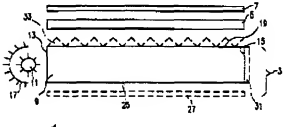

FIG. 1

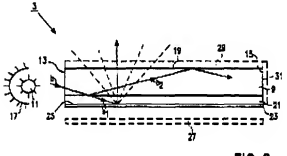

FIG. 2

- a reflection type polarizer (21) disposed on the lower surface of the light pipe, the reflection type polarizer dividing an incident natural light into a circularly polarized light reflected light and a transparent light, and the reflected light being emitted through the upper surface of the light pipe (col. 3, lines 4-22; col. 6, lines 55-59); and
- a liquid crystal shutter disposed on the upper surface of the light pipe (9), and having a liquid crystal cell (5) and at least one sheet of polarizer (7).

Accordingly, claims 1 and 10 are anticipated.

As to claim 2, Mol also shows that the reflection typepolarizer (21) is closely and integrally attached to the lower surface of the light pipe (9).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mol as applied to claims 1, 2 and 10 above.

As to claim 11, using a reflection type polarizer that includes one kind or two kinds or more of multi layer film of double refractive organic film and a ¼ wavelength plate is common and known in the art and thus would have been obvious to optimize performance.

12. Claims 3-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being obvious over Mol as applied to claims1, 2 and 10 above and in view of Umemoto et al., (Umemoto), USPAT 6,590,625.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer

in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

As to claim 3, using a light source that is capable of turning the light on and off would have been obvious to one of ordinary skill in the art for advantages such as to make it possible for visual recognition in a transmission mode, as per the teachings of Umemoto (col. 9, lines 48-50).

As to claims 4 and 5, Mol does not explicitly disclose the claimed limitations.

Umemoto discloses a liquid crystal display apparatus having a light pipe having light emitting means wherein the light emitting means comprises a structure repeating pitches of 50 μm to 1.5 mm of continuous or discontinuous prismatic structures composed of a short side face and a long side face, the short side face comprises an oblique face and a flat plane, the oblique face in which the light pipe is opposite at its surface to the incident side and has the oblique face tilting 35 to 45 degrees with respect a reference flat plane of the lower surface, and the long side flat plane in which a crossing angle with the reference flat plane is 10 degrees or less in which the whole difference is angle is within 5 degrees, difference in angle in relation with a nearest long side is within 1 degrees and a projected area with respect to the reference flat plane is 8 times or more of the projected area of the oblique face and that the light emitting means or 5 times or more of the projected area of the short side face. Umemoto also discloses

that using a light emitting means having the aforementioned characteristics is advantageous for several reasons such as providing output light that is excellent in frontal direction (col.4, line 23- col. 5, line 40; col. 6, lines 35-38).

Umemoto is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a light pipe having light emitting means exhibiting the claimed characteristics.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the light emitting means of Mol so that the light emitting means exhibit the claimed characteristics so that output light that is excellent in frontal direction is obtained, as per the teachings of Umemoto.

As to claim 6, Umemoto also discloses that the repeating pitches of the prismatic structures are fixed (col. 6, lines 42-43).

As to claim 7, Umemoto also discloses that the short side face of the prismatic structures has the projected with of 40 μm or less with respect to the reference flat plane (col. 6, lines 9-16).

As to claim 8, Umemoto further discloses that a ridged line direction of the prismatic structures is within ∓35 degrees with respect to the reference flat plane of the incident side surface (col. 7, lines 1-6).

As to claim 9, Umemoto also discloses that the light pipe passes the incident light from the lower surface at 90% or more of total light transmissivity (col. 11, lines 20-21).

As to claim 12, Umemoto discloses (col. 2, lines 6-20) that by disposing a diffusion layer between the reflection layer and the liquid crystal cells is advantageous

since it will prevent inversion between reflection and transmission and thus would have been obvious.

As to claim 13 and 14, Umemoto discloses that the projected area of the reference flat plane is 10 times or more (claim 13) or 15 time or more (claim 14) of the projected area of the short side face (col. 5, lines 45-50).

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,459,461 in view of Kawamoto et al., (Kawamoto), US 2003/0147042 or in alternate of Mol et al., (Mol), USPAT 5,856,885.

15. US 6,459,461discloses a liquid crystal display apparatus comprising a light source, a light pipe, a reflection type polarizer and a shutter as claimed. The only difference between the claimed limitations of the above reference and the instant invention is that the reflection type polarizer of the above reference is supplying linearly

polarized light compared to circularly polarized light as in the instant invention. However, as evidenced by Kawamoto or Mol, using a reflective type polarizer that supplies circularly polarized light is common and known in the art and thus would have been obvious to optimize performance.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

T. Chowdhury
Primary Examiner
Technology Center 2800

TRC
October 07, 2003